

## WHAT IS CLAIMED IS:

1. A fiber Bragg grating strain sensor, comprising:  
a strain sensor member having a strain sensing section for receiving stress in a longitudinal direction; and  
a fiber Bragg grating fastened to the strain sensor member within the strain sensing section, having a first end oriented in the longitudinal direction, a second end oriented in a lateral direction perpendicular to the longitudinal direction, and a fiber axis describing one quarter of a circular arc between the first end and the second end.
2. The fiber Bragg grating strain sensor of claim 1, wherein the strain sensor member has a form of a plate of constant thickness, including the strain sensing section as a central section, further including a pair of stress-transmitting appendages joined to longitudinally opposite sides of the strain sensing section, by which said stress is applied to the strain sensing section.
3. The fiber Bragg grating strain sensor of claim 2, wherein the strain sensing section has a constant width in the lateral direction.
4. The fiber Bragg grating strain sensor of claim 3, wherein the stress-transmitting appendages are wider than the strain sensing section in the lateral direction.
5. The fiber Bragg grating strain sensor of claim 4, wherein the stress-transmitting appendages and strain sensing section form an H shape.
6. The fiber Bragg grating strain sensor of claim 2,

wherein the strain sensing section has a tapered shape.

7. The fiber Bragg grating strain sensor of claim 6, wherein the stress-transmitting appendages are at least as wide, in the lateral direction, as the sides of the strain sensing section to which they are joined.

8. The fiber Bragg grating of claim 7, wherein the width of the strain sensing section decreases continuously from one of said longitudinally opposite sides to another one of said longitudinally opposite sides.

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